calcium/phosphorus/vitamin D_3 deficiency. One solution to the problem would be to ensure that the females are kept on a diet of mainly artificial food, with the amount of live insects kept to a minimum, even when the nestlings have hatched. This does not solve the problem for those females reared in captivity, unless they are removed from the nest and hand-reared. Obviously more research needs to be done on providing insects that will give the birds an adequate and balanced diet.

The other problem relates to the management of the aviary. Clearly, three females and one male in an aviary makes it difficult to give the male access to one female at a time. Larger and better designed aviaries with no more than two females per male would make the management easier. Removal of some nests would prevent the synchrony which meant that females required the male at the same time.

While these are difficult problems, they are not insurmountable, provided that any future worker who attempts to breed these birds is aware of the high labour requirement necessary and is given sufficient funding.

The project ended in March 1981 when the birds were given to private aviculturalists.

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PSYLLIDS AND MEAT ANTS ON THE TREE *ALBIZIA LOPHANTHA*

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Inspection of an isolated plant of *Albizia lophantha* (family Mimosaceae) about 3 m high, at Pallinup River, 13 km NW of Groper and 106 km NE of Albany, showed it to be covered in meat ants, *Iridomyrmex purpureus*, Fig. 1. Of the total population of 13 *A. lophantha* plants examined on December 5, 1982, three trees exhibited this massive ant invasion. Closer inspection showed an even greater abundance of minute orange eggs (400 um long, 200 um wide, Fig. 2), especially in the grooves running along the stems and leaf petioles. These were accompanied by many free-living nymphs at various stages, their rejected exoskeletons (exuviae) and fewer winged adults, 3-4 mm long. These insects proved to be psyllids (Hemiptera), possibly belonging to two unnamed species of *Psylla*, which are usually very host specific (see references).

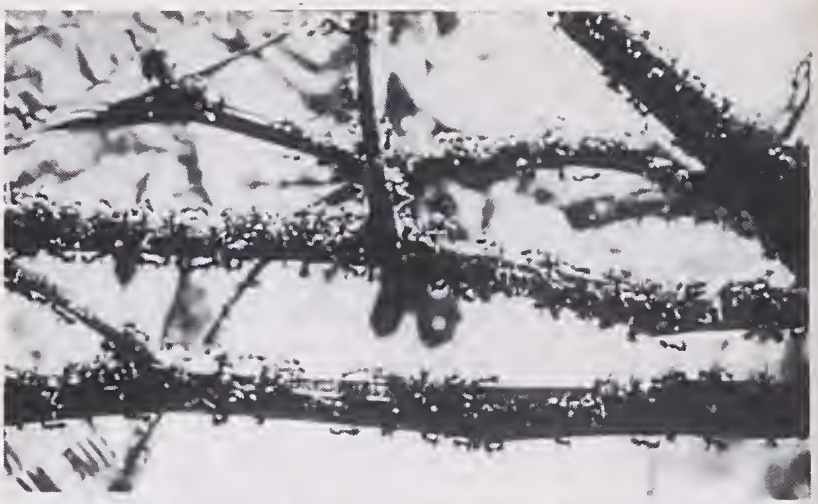

Figure 1. Typical branches of *Albizia lophantha* covered in *Iridomyrmex purpureus* (about 9 mm long) at Pallinup River, southwestern Australia.

Figure 2. Scanning electron micrograph of eggs and nymphs of psyllids on petiole of *A. lophantha* which were tended by the ants. Scale = 1 mm.

The ants appeared to be tending the sap-sucking psyllid nymphs for honeydew and ignored the adults. There was no evidence of predation by the ants on the psyllids. The three host plants were among the healthiest in the population and may have possessed sufficient sap to maintain the large populations of psyllids. The pugnacious ants may in turn have given the plant greater protection from more serious pests, such as wood borers which were evident in some trees. Some plants also had limited numbers of meat ants visiting the extrafloral nectaries on their petioles, which is well-established as an antiherbivore device. I have not previously seen this association on *Albizia lophantha*, and this appears to be a new genus record of psyllid host, although the presence of psyllids is well-known on the related genus *Acacia* in eastern Australia (see references). It is rare to find a plant so completely covered in aggressive ants and it would be of interest to know if the detrimental effects of the psyllids on the plant are outweighed by the predatory behaviour by the ants towards phytophagous insects.

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A SERENDIPITOUS AGE ESTIMATION OF A LIZARD, *TILIQUA RUGOSA* (LACERTILIA: SCINCIDAE).

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SUMMARY

A chance finding of compacted plugs of sloughed skin layers in the external ear canals of a *T. rugosa* specimen, enabled the minimum age of the animal to be estimated at twenty years.

INTRODUCTION

The bobtail, *Tiliqua rugosa* (Gray, 1825) has for some time been a popular animal for both physiological and ecological studies since it is large, docile and is easily found in a wide range of habitats across most of temperate Australia (Cogger, 1979). Although aspects of its natural history are emerging (Bull, 1978; Satrawaha and Bull, 1981), little is known of its longevity, a critical factor in the adaptive strategy of any species. Through chance we have been able to estimate the age of one large male at a minimum of twenty years. This was predicted in Bustard's (1970) observation that *T. rugosa* has a potential for long life span in view of the low reproductive rate of commonly two young per year. Bustard's observation is substantiated if one assumes the species to be K-selected as reviewed and discussed by Congdon et al. (1982), pp. 241-242.

METHODS AND RESULTS

In the course of our work on the auditory physiology of *T. rugosa*, the external ear canals were routinely cleared of parasites and any other obstructions. Commonly, a few layers of previously sloughed skin remained in the external auditory meatus. These were in the shape of a sock, the expanded end being a cast of the expansion of the external ear canal proximal to the tympanum. We were surprised to find one animal with both ears completely blocked by compacted skin layers. Once these plugs had been removed, it was obvious that the animal was unusual in that the diameter of the external ear canal was very small in relation to the space next to the tympanum, thus sloughed skin could not have been removed naturally unless it had disintegrated. One of the plugs was examined under a dissecting microscope and approximately fourteen distinct layers were counted before the individual layers began to crumble. The remaining plug was wax embedded, sectioned in 8 μm slices, mounted and stained with toluidine blue. Examination of the layers revealed differential stain affinities within each layer of skin. Pale green sub-layers that appeared as a light grey in the outer layers in Fig. 1 were repeated in each skin layer and aided in identifying the individual layers of skin. Fig. 1 is a photographic montage of one section where all layers could be counted. However, we had to examine serial sections before and after that shown in Fig. 1 to confirm the continuity of layers. In all, 19 layers were counted.

DISCUSSION

Over the previous four years we have held up to thirty animals at a time in open pens. These have regularly sloughed skin in mid to late summer and have produced live progeny in early autumn. The reproductive pattern has also been observed by Bourne (1980) and the sloughing cycle by Bull (1978). Bamford (1980) observed that the young born in autumn first shed their skin in the following summer. The plugs were removed from the animal in question in